

LISTING OF THE CLAIMS

Claim 1. (previously presented) A light conversion apparatus comprising:

a germanium-based photodiode; and

a polysilicon-based receiving electrode for receiving light to be converted by the photodiode, wherein the receiving electrode permits the received light to substantially pass through the receiving electrode to the photodiode, the photodiode generates photogenerated carriers from the received light, and the receiving electrode is electrically coupled with the photodiode to extract the photogenerated carriers from the germanium-based photodiode and conduct the collected photogenerated carriers to another component.

Claim 2. (original) The apparatus as defined by claim 1 wherein the receiving electrode is doped.

Claim 3. (original) The apparatus as defined by claim 2 wherein the receiving electrode is doped with an n-type dopant.

Claim 4. (cancelled)

Claim 5. (original) The apparatus as defined by claim 1 further comprising a bottom electrode coupled to the photodiode, the apparatus further having a voltage between the top and bottom electrodes.

Claim 6. (original) The apparatus as defined by claim 1 further including a waveguide coupled with the receiving electrode.

Claim 7. (previously presented) The apparatus as defined by claim 1 wherein the photodiode has a p-type doped region, an n-type doped region, and an intrinsic region between the two doped regions, the receiving electrode being one of n-type or p-type doped regions, the receiving electrode being coupled closer to the doped region of the photodiode having a like doping to it than to the doped region of the photodiode having a different doping.

Claim 8. (previously presented) A light conversion apparatus comprising:

a germanium-based photodiode having an n-type region that is doped with n-type dopant and a p-type region that is doped with p-type dopant; and

a polysilicon-based receiving electrode doped with one of an n-type or a p-type dopant, wherein the receiving electrode receives light to be converted by the photodiode and permits the received light to substantially pass through the receiving electrode to the photodiode, the photodiode generates photogenerated carriers from the received light, the receiving electrode is electrically coupled with the photodiode to extract the photogenerated carriers from the germanium-based photodiode and conduct the collected photogenerated carriers to another component, and the receiving electrode is coupled closer to the doped region of the photodiode having a like doping to it than to the doped region of the photodiode having a different doping.

Claim 9. (original) The apparatus as defined by claim 8 wherein the receiving electrode is doped with an n-type dopant, the receiving electrode being coupled closer to the n-type region of the photodiode than to the p-type region of the photodiode.

Claims 10-11. (cancelled)

Claim 12. (original) The apparatus as defined by claim 8 further comprising a bottom electrode coupled to photodiode, the apparatus further having a voltage between the top and bottom electrodes.

Claim 13. (original) The apparatus as defined by claim 8 wherein the receiving electrode has a thickness of between about 0.1 and 0.3 microns.

Claim 14. (original) The apparatus as defined by claim 8 wherein the receiving electrode has no less than about a ninety percent concentration of polysilicon.

Claim 15. (original) The apparatus as defined by claim 8 wherein the receiving electrode includes polysilicon germanium.

Claim 16. (previously presented) A light conversion apparatus comprising:
a germanium-based photodiode; and
polysilicon-based means for receiving light to be converted by the photodiode, for extracting photogenerated carriers produced by the germanium-based photodiode as a result of converting the light and for conducting the collected photogenerated carriers to another component, wherein the polysilicon-based means permits the received light to substantially pass through it to the photodiode.

Claim 17. (original) The apparatus as defined by claim 16 wherein the polysilicon-based means includes a receiving electrode comprised of at least ninety percent polysilicon.

Claim 18. (original) The apparatus as defined by claim 16 wherein the polysilicon-based means includes doped polysilicon.

Claim 19. (original) The apparatus as defined by claim 16 further comprising a bottom electrode having a voltage difference with the polysilicon-based means.

Claim 20. (cancelled)

Claim 21. (previously presented) The apparatus as defined by claim 1 wherein a doping process dopes a portion of the photodiode after the receiving electrode is coupled with the photodiode.

Claim 22. (previously presented) The apparatus as defined in claim 1, wherein the photogenerated carriers comprise electrons.

Claim 23. (previously presented) The apparatus as defined in claim 1, wherein the photogenerated carriers comprise holes.